

## SEQUENCE LISTING

&lt;110&gt; Markham and Bonthron

&lt;120&gt; Wound Healing and Orofacial Clefting

&lt;130&gt; 59367

&lt;140&gt; 09/869,564

&lt;141&gt; 2001-06-29

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&lt;151&gt; 2000-01-06

&lt;150&gt; GB9900167.9

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&lt;160&gt; 39

&lt;170&gt; PatentIn Ver. 2.1

&lt;210&gt; 1

&lt;211&gt; 4997

&lt;212&gt; DNA

&lt;213&gt; Homo sapiens

&lt;220&gt;

&lt;221&gt; CDS

&lt;222&gt; (85) .. (2283)

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&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;400&gt; 2

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 Gln Ala Gln Gly Ile Ile Lys Leu Gly Arg Trp Asn Pro Leu Pro Leu  
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Lys Glu Cys Pro Leu Ser Gln Ser Met Ile Ser Ser Ile Val Asn Ser	
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325 330 335	
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Gln Gln Phe Leu Asn His Pro Pro Ile Pro Arg Ala Val Lys Pro Glu	
340 345 350	
cca aca aac tcc tct gtg gaa gtc tct cct gat atc tac cag caa gtt	1104
Pro Thr Asn Ser Ser Val Glu Val Ser Pro Asp Ile Tyr Gln Gln Val	
355 360 365	

aga gat gag ttg aag agg gct agt gtg tct caa gct gtc ttt gca aga 1152  
 Arg Asp Glu Leu Lys Arg Ala Ser Val Ser Gln Ala Val Phe Ala Arg  
 370 375 380

gtg gca ttc aac cgc aca cag gga tta ttg tca gag ata ctg cgt aag 1200  
 Val Ala Phe Asn Arg Thr Gln Gly Leu Leu Ser Glu Ile Leu Arg Lys  
 385 390 395 400

gaa gaa gat ccc agg act gcg tct cag tct ctt cta gta aac ctg agg 1248  
 Glu Glu Asp Pro Arg Thr Ala Ser Gln Ser Leu Leu Val Asn Leu Arg  
 405 410 415

gcc atg cag aac ttc ctc aac ctg cct gaa gtg gag cgt gat cgc att 1296  
 Ala Met Gln Asn Phe Leu Asn Leu Pro Glu Val Glu Arg Asp Arg Ile  
 420 425 430

tac cag gat gag cga gag agg agc atg aac ccc aat gtg agc atg gtc 1344  
 Tyr Gln Asp Glu Arg Glu Arg Ser Met Asn Pro Asn Val Ser Met Val  
 435 440 445

tcc tct gcc tct agc agt ccc agc tcc tcc cga acc cca cag gcc aaa 1392  
 Ser Ser Ala Ser Ser Ser Pro Ser Ser Ser Arg Thr Pro Gln Ala Lys  
 450 455 460

acc tcg aca ccg aca aca gac ctc cct att aag gtg gac ggc gcc aac 1440  
 Thr Ser Thr Pro Thr Thr Asp Leu Pro Ile Lys Val Asp Gly Ala Asn  
 465 470 475 480

gtc aac atc aca gct gcc att tat gac gag atc caa cag gag atg aaa 1488  
 Val Asn Ile Thr Ala Ala Ile Tyr Asp Glu Ile Gln Gln Glu Met Lys  
 485 490 495

aga gcc aag gtg tct caa gcc ctg ttt gcc aaa gtg gct gca aac aaa 1536  
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agt cag ggc tgg ctt tgc gaa ctg ctt cgt tgg aag gag aac ccc agc 1584  
 Ser Gln Gly Trp Leu Cys Glu Leu Leu Arg Trp Lys Glu Asn Pro Ser  
 515 520 525

cca gaa aac cgc acc ctt tgg gag aat ctc tgc acc atc cgc cgt ttc 1632  
 Pro Glu Asn Arg Thr Leu Trp Glu Asn Leu Cys Thr Ile Arg Arg Phe  
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ctg aat ctt ccc caa cat gag cgg gat gtg atc tat gag gaa gaa tct 1680  
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cga cat cac cac agt gaa cgc atg cag cat gtg gtc cag ctc cca cct 1728  
 Arg His His His Ser Glu Arg Met Gln His Val Val Gln Leu Pro Pro  
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gag ccc gtg cag gtc ctt cat cga cag cag tcc cag cca act aag gag 1776  
 Glu Pro Val Gln Val Leu His Arg Gln Gln Ser Gln Pro Thr Lys Glu  
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agc tcc cct ccc aga gaa gaa gca ccc cca ccg cct cct cca aca gaa 1824

Ser Ser Pro Pro Arg Glu Glu Ala Pro Pro Pro Pro Pro Pro Thr Glu  
595 600 605

gac agc tgt gcc aaa aag cct cgg tct cgc aca aag atc tct ttg gaa 1872  
Asp Ser Cys Ala Lys Lys Pro Arg Ser Arg Thr Lys Ile Ser Leu Glu  
610 615 620

gcc ctg ggc atc ctt caa agc ttc atc cat gat gta ggc ctc tat ccc 1920  
Ala Leu Gly Ile Leu Gln Ser Phe Ile His Asp Val Gly Leu Tyr Pro  
625 630 635 640

gac cag gaa gcc atc cac aca ctc tcc gcc cag ctg gat ctc ccc aaa 1968  
Asp Gln Glu Ala Ile His Thr Leu Ser Ala Gln Leu Asp Leu Pro Lys  
645 650 655

cac acc atc atc aag ttc ttc cag aac cag agg tac cac gtg aag cac 2016  
His Thr Ile Ile Lys Phe Phe Gln Asn Gln Arg Tyr His Val Lys His  
660 665 670

cac ggg aag ctg aaa gag cac ctg ggc tcc gcg gtg gac gtg gct gaa 2064  
His Gly Lys Leu Lys Glu His Leu Gly Ser Ala Val Asp Val Ala Glu  
675 680 685

tat aag gac gag gag ctg ctg acc gag tca gag gag aac gac agc gag 2112  
Tyr Lys Asp Glu Glu Leu Leu Thr Glu Ser Glu Glu Asn Asp Ser Glu  
690 695 700

gaa ggc tcc gag gag atg tac aaa gtg gag gct gag gag gaa aat gct 2160  
Glu Gly Ser Glu Glu Met Tyr Lys Val Glu Ala Glu Glu Glu Asn Ala  
705 710 715 720

gac aaa agc aag gca gca cct gcc gaa att gac cag aga taa 2202  
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725 730

&lt;210&gt; 4

&lt;211&gt; 733

&lt;212&gt; PRT

&lt;213&gt; Mus musculus

&lt;220&gt;

&lt;221&gt; misc\_feature

&lt;222&gt; (21)

&lt;223&gt; Xaa represents any amino acid

&lt;400&gt; 4

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Arg Leu Glu Gln Asn Gly Ser Pro Met Gly Ala Arg Gly Arg Pro Asn  
35 40 45

Gly Ala Val Ala Lys Ala Val Gly Gly Leu Met Ile Pro Val Phe Cys  
12

50 55 60  
Val Val Glu Gln Leu Asp Gly Ser Leu Glu Tyr Asp Asn Arg Glu Glu  
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85 90 95  
Val Glu Thr Ala Leu Leu Ala Leu Gly Tyr Ser His Ser Ser Ala Ala  
100 105 110  
Gln Ala Gln Gly Ile Ile Lys Leu Gly Arg Trp Asn Pro Leu Pro Leu  
115 120 125  
Ser Tyr Val Thr Asp Ala Pro Asp Ala Thr Val Ala Asp Met Leu Gln  
130 135 140  
Asp Val Tyr His Val Val Thr Leu Lys Ile Gln Leu Gln Ser Cys Ser  
145 150 155 160  
Lys Leu Glu Asp Leu Pro Ala Glu Gln Trp Asn His Ala Thr Val Arg  
165 170 175  
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180 185 190  
Lys Glu Cys Pro Leu Ser Gln Ser Met Ile Ser Ser Ile Val Asn Ser  
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Thr Tyr Tyr Ala Asn Val Ser Ala Thr Lys Cys Gln Glu Phe Gly Arg  
210 215 220  
Trp Tyr Lys Lys Tyr Lys Lys Ile Lys Val Glu Arg Val Glu Arg Glu  
225 230 235 240  
Asn Leu Ser Asp Tyr Cys Val Leu Gly Gln Arg Pro Met His Leu Pro  
245 250 255  
Asn Met Asn Gln Leu Ala Ser Leu Gly Lys Thr Asn Glu Gln Ser Pro  
260 265 270  
His Ser Gln Ile His His Ser Thr Pro Ile Arg Asn Gln Val Pro Ala  
275 280 285  
Leu Gln Pro Ile Met Ser Pro Gly Leu Leu Ser Pro Gln Leu Ser Pro  
290 295 300  
Gln Leu Val Arg Gln Gln Ile Ala Met Ala His Leu Ile Asn Gln Gln  
305 310 315 320  
Ile Ala Val Ser Arg Leu Leu Ala His Gln His Pro Gln Ala Ile Asn  
325 330 335  
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340 345 350  
Pro Thr Asn Ser Ser Val Glu Val Ser Pro Asp Ile Tyr Gln Gln Val

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 Val Ala Phe Asn Arg Thr Gln Gly Leu Leu Ser Glu Ile Leu Arg Lys  
 385                      390                      395                      400  
 Glu Glu Asp Pro Arg Thr Ala Ser Gln Ser Leu Leu Val Asn Leu Arg  
 405                      410                      415  
 Ala Met Gln Asn Phe Leu Asn Leu Pro Glu Val Glu Arg Asp Arg Ile  
 420                      425                      430  
 Tyr Gln Asp Glu Arg Glu Arg Ser Met Asn Pro Asn Val Ser Met Val  
 435                      440                      445  
 Ser Ser Ala Ser Ser Ser Pro Ser Ser Ser Arg Thr Pro Gln Ala Lys  
 450                      455                      460  
 Thr Ser Thr Pro Thr Thr Asp Leu Pro Ile Lys Val Asp Gly Ala Asn  
 465                      470                      475                      480  
 Val Asn Ile Thr Ala Ala Ile Tyr Asp Glu Ile Gln Gln Glu Met Lys  
 485                      490                      495  
 Arg Ala Lys Val Ser Gln Ala Leu Phe Ala Lys Val Ala Ala Asn Lys  
 500                      505                      510  
 Ser Gln Gly Trp Leu Cys Glu Leu Leu Arg Trp Lys Glu Asn Pro Ser  
 515                      520                      525  
 Pro Glu Asn Arg Thr Leu Trp Glu Asn Leu Cys Thr Ile Arg Arg Phe  
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 Arg His His His Ser Glu Arg Met Gln His Val Val Gln Leu Pro Pro  
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 Glu Pro Val Gln Val Leu His Arg Gln Gln Ser Gln Pro Thr Lys Glu  
 580                      585                      590  
 Ser Ser Pro Pro Arg Glu Glu Ala Pro Pro Pro Pro Pro Pro Thr Glu  
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 Asp Ser Cys Ala Lys Lys Pro Arg Ser Arg Thr Lys Ile Ser Leu Glu  
 610                      615                      620  
 Ala Leu Gly Ile Leu Gln Ser Phe Ile His Asp Val Gly Leu Tyr Pro  
 625                      630                      635                      640  
 Asp Gln Glu Ala Ile His Thr Leu Ser Ala Gln Leu Asp Leu Pro Lys  
 645                      650                      655  
 His Thr Ile Ile Lys Phe Phe Gln Asn Gln Arg Tyr His Val Lys His

660 665 670

His Gly Lys Leu Lys Glu His Leu Gly Ser Ala Val Asp Val Ala Glu  
675 680 685

Tyr Lys Asp Glu Glu Leu Leu Thr Glu Ser Glu Glu Asn Asp Ser Glu  
690 695 700

Glu Gly Ser Glu Glu Met Tyr Lys Val Glu Ala Glu Glu Glu Asn Ala  
705 710 715 720

Asp Lys Ser Lys Ala Ala Pro Ala Glu Ile Asp Gln Arg  
725 730

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24

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 Arg Ser Gly Ser Pro Asp Val Lys Gly Pro Pro Pro Val Lys Val Ala  
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 Arg Leu Glu Gln Asn Gly Ser Pro Met Gly Ala Arg Gly Arg Pro Asn  
 35 40 45  
 ggc gcc gtg gcc aag gcc gtg gga ggt ttg atg att cct gtc ttt tgt 192  
 Gly Ala Val Ala Lys Ala Val Gly Gly Leu Met Ile Pro Val Phe Cys  
 50 55 60  
 gtc gtg gag cag ttg gac ggc tct ctt gaa tat gac aac aga gaa gaa 240  
 Val Val Glu Gln Leu Asp Gly Ser Leu Glu Tyr Asp Asn Arg Glu Glu  
 65 70 75 80  
 cac gcc gag ttt gtc ctg gtg cgg aaa gat gtg ctt ttt agc cag ctg 288  
 His Ala Glu Phe Val Leu Val Arg Lys Asp Val Leu Phe Ser Gln Leu

85										90										95										
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aaa	gaa	tgc	cct	ctc	tcc	cag	agt	atg	att	tca	tcc	att	gta	aat	agc		624													
Lys	Glu	Cys	Pro	Leu	Ser	Gln	Ser	Met	Ile	Ser	Ser	Ile	Val	Asn	Ser															
195					200					205																				
aca	tat	tat	gcc	aat	gtg	tca	gca	acc	aag	tgc	cag	gag	ttt	ggg	aga		672													
Thr	Tyr	Tyr	Ala	Asn	Val	Ser	Ala	Thr	Lys	Cys	Gln	Glu	Phe	Gly	Arg															
210					215					220																				
tgg	tat	aaa	aag	tac	aag	aag	att	aaa	gtg	gaa	aga	gtg	gaa	cga	gaa		720													
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225					230					235					240															
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260					265					270																				
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His	Ser	Gln	Ile	His	His	Ser	Thr	Pro	Ile	Arg	Asn	Gln	Val	Pro	Ala															
275					280					285																				
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Gln	Leu	Val	Arg	Gln	Gln	Ile	Ala	Met	Ala	His	Leu	Ile	Asn	Gln	Gln															
305					310					315					320															

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cag cag ttc ctg aac cat cca ccc atc ccc aga gca gtt aag cca gag Gln Gln Phe Leu Asn His Pro Pro Ile Pro Arg Ala Val Lys Pro Glu 340 345 350	1056
cca acc aac tct tcc gtg gaa gtc tct cca gat atc tac cag caa gtc Pro Thr Asn Ser Ser Val Glu Val Ser Pro Asp Ile Tyr Gln Gln Val 355 360 365	1104
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atc aac atc aca gct gcc att tat gac gag atc caa cag gag atg aaa Ile Asn Ile Thr Ala Ala Ile Tyr Asp Glu Ile Gln Gln Glu Met Lys 485 490 495	1488
agg gcc aag gtg tct caa gcc ctg ttt gcc aaa gtg gct gca aat aaa Arg Ala Lys Val Ser Gln Ala Leu Phe Ala Lys Val Ala Ala Asn Lys 500 505 510	1536
agt cag ggc tgg ctg <sup>o</sup> tgt gaa ctg ctc cgc tgg aag gag aac cca agc Ser Gln Gly Trp Leu Cys Glu Leu Leu Arg Trp Lys Glu Asn Pro Ser 515 520 525	1584
cca gaa aac cgc acc ctc tgg gaa aac ctc tgt acc atc cgt cgc ttc Pro Glu Asn Arg Thr Leu Trp Glu Asn Leu Cys Thr Ile Arg Arg Phe 530 535 540	1632



ctg aac ctt ccc cag cat gag agg gat gtc atc tat gag gag gag tca	1680
Leu Asn Leu Pro Gln His Glu Arg Asp Val Ile Tyr Glu Glu Glu Ser	
545 550 555 560	
agg cat cac cac agc gaa cgc atg caa cac gtg gtc cag ctt ccc cct	1728
Arg His His His Ser Glu Arg Met Gln His Val Val Gln Leu Pro Pro	
565 570 575	
gag ccg gtg cag gta ctt cat aga cag cag tct cag cca gcc aag gag	1776
Glu Pro Val Gln Val Leu His Arg Gln Gln Ser Gln Pro Ala Lys Glu	
580 585 590	
agt tcc cct ccc aga gaa gaa gcg cct ccc cca cct cct ccg act gaa	1824
Ser Ser Pro Pro Arg Glu Glu Ala Pro Pro Pro Pro Pro Pro Thr Glu	
595 600 605	
gac agt tgt gcc aaa aag ccc cgg tct cgc aca aag atc tcc tta gaa	1872
Asp Ser Cys Ala Lys Lys Pro Arg Ser Arg Thr Lys Ile Ser Leu Glu	
610 615 620	
gcc ctg ggg atc ctc caa agc ttt att cat gat gta ggc ctg tac cca	1920
Ala Leu Gly Ile Leu Gln Ser Phe Ile His Asp Val Gly Leu Tyr Pro	
625 630 635 640	
gac cag gaa gcc atc cac act ctt tcg gct cag ctg gat ctc ccc aaa	1968
Asp Gln Glu Ala Ile His Thr Leu Ser Ala Gln Leu Asp Leu Pro Lys	
645 650 655	
cac acc atc atc aag ttc ttc cag aac cag cgg tac cac gtg aag cac	2016
His Thr Ile Ile Lys Phe Phe Gln Asn Gln Arg Tyr His Val Lys His	
660 665 670	
cac ggg aag ctg aaa gag cac ctg ggc tcc gcg gtg gac gtg gct gaa	2064
His Gly Lys Leu Lys Glu His Leu Gly Ser Ala Val Asp Val Ala Glu	
675 680 685	
tat aag gac gag gag ctg ctg acc gag tca gag gag aac gac agc gag	2112
Tyr Lys Asp Glu Glu Leu Leu Thr Glu Ser Glu Glu Asn Asp Ser Glu	
690 695 700	
gaa ggc tcc gag gag atg tac aaa gtg gag gct gag gag gaa aat gct	2160
Glu Gly Ser Glu Glu Met Tyr Lys Val Glu Ala Glu Glu Glu Asn Ala	
705 710 715 720	
gac aaa agc aag gca gca cct gcc gaa att gac cag aga	2199
Asp Lys Ser Lys Ala Ala Pro Ala Glu Ile Asp Gln Arg	
725 730	

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